

## CLAIMS

What is claimed is:

Sub B' 1. An apparatus, comprising:

2       a) a backplane, said backplane having a switch card interface and an  
3            adapter card interface;

4       b) said switch card interface having input/outputs in an arrangement that  
5            functionally mates to a networking layer system switch card and a  
6            physical layer system switch card; and

7       c) said adapter card interface coupled to said switch card interface, said  
8            adapter card interface having input/outputs in an arrangement that  
9            functionally mates to a networking layer system adapter card and a  
10           physical layer system adapter card.

1       2. The apparatus of claim 1 further comprising a processor card interface, said  
2           processor card interface coupled to said switch card interface and said  
3           adapter card interface.

1       3. The apparatus of claim 2 wherein said coupling between said processor card  
2           interface and said switch and adapter card interfaces further comprises a  
3           system bus.

1 4. The apparatus of claim 2 wherein said coupling between said processor card  
2 interface and said switch and adapter card interfaces further comprises a  
3 clock trace.

1 5. The apparatus of claim 4 wherein said clock line connects said processor  
2 card interface to said adapter card interface.

1 6. The apparatus of claim 4 wherein said clock line connects said processor  
2 card interface to said switch card interface.

1 7. The apparatus of claim 1 wherein said coupling further comprises a major  
2 link, said major link comprising at least one minor link.

1 8. The apparatus of claim 7 wherein said minor link further comprises a pair of  
2 differential transmit traces.

1 9. The apparatus of claim 7 wherein said minor link further comprises a pair of  
2 differential receive traces.

1 10. The apparatus of claim 1 further comprising an ATM switch card mated  
2 with said switch card interface and an ATM adapter card mated with said  
3 adapter card interface.

1 11. The apparatus of claim 1 further comprising a SONET switch card mated  
2 with said switch card interface and a SONET adapter card mated with said  
3 adapter card interface.

Sub a'

1 12. An apparatus, comprising:  
2 a) a backplane, said backplane having a plurality of switch card interfaces  
3 and a plurality of adapter card interfaces;  
4 b) each of said switch card interfaces having input/outputs in an  
5 arrangement that functionally mates to an ATM switch card and a  
6 SONET switch card; and  
7 c) each of said adapter card interfaces coupled to each of said switch card  
8 interfaces, each of said adapter card interfaces having input/outputs in  
9 an arrangement that functionally mates to an ATM adapter card and a  
10 SONET adapter card.

1 13. The apparatus of claim 12 further comprising an ATM switch card mated  
2 with one of said switch card interfaces and a SONET switch card mated  
3 with another of said switch card interfaces.

1 14. The apparatus of claim 13 further comprising an ATM adapter card mated  
2 with one of said adapter card interfaces and a SONET adapter card mated  
3 with another of said adapter card interfaces.

Sub a<sup>2</sup>

1 15. The apparatus of claim 13 further comprising a hybrid adapter card mated  
2 with one of said adapter card interfaces, each of said adapter card interfaces  
3 having input/outputs that functionally mate to said hybrid adapter card.

1 16. The apparatus of claim 12 further comprising a first ATM switch card mated  
2 with one of said switch card interfaces, a redundant ATM switch card mated  
3 with another of said switch card interfaces and an ATM adapter card mated  
4 with one of said adapter card interfaces.

Sub a<sup>3</sup>

1 17. The apparatus of claim 16 wherein said coupling further comprises a  
2 plurality of major links, one major link between each said adapter card and  
3 each said switch card, each of said major links further comprising a plurality  
4 of minor links, each of said minor links further comprising a real data minor  
5 link and a redundant minor link.

1 18. The apparatus of claim 12 further comprising a first SONET switch card  
2 mated with one of said switch card interfaces, a redundant SONET switch  
3 card mated with another of said switch card interfaces and a SONET  
4 adapter card mated with one of said adapter card interfaces.

Sub a<sup>4</sup>

1 19. The apparatus of claim 18 wherein said coupling further comprises a  
2 plurality of major links, one major link between each said adapter card and

3 each said switch card, a real data major link between said SONET adapter  
4 card and said first SONET switch card, a redundant major link between said  
5 SONET adapter card and said redundant SONET switch card.

Sub a 5  
1 20. The apparatus of claim 12 further comprising four said switch card  
2 interfaces and twelve said adapter card interfaces.

1 21. A method, comprising:  
2 a) forming a first and second backplane according to a manufacturing  
3 process;  
4 b) integrating said first backplane into a networking layer system; and  
5 c) integrating said second backplane into a physical layer system.

1 22. The method of claim 21 wherein said manufacturing process further  
2 comprises forming minor link conducting traces associated with a major  
3 link.

1 23. The method of claim 22 wherein said forming minor link conducting traces  
2 further comprises forming a pair of differential transmit conducting traces.

1 24. The method of claim 23 wherein said forming minor link conducting traces  
2 further comprises forming a pair of differential receive conducting traces.

1 25. The method of claim 21 wherein said manufacturing process further  
2 comprises forming system bus conducting traces.

1 26. The method of claim 21 wherein said manufacturing process further  
2 comprises forming clock traces.

1 27. The method of claim 21 further comprising affixing a card interface to said  
2 backplane.

1 28. The method of claim 27 further comprising affixing an adapter card  
2 interface to said backplane.

1 29. The method of claim 27 further comprising affixing a switch card interface  
2 to said backplane.

1 30. The method of claim 27 further comprising affixing a processor card  
2 interface to said backplane.

1 31. The method of claim 21 wherein said manufacturing process further  
2 comprises a lithographic process that employs a mask set.

1 32. The method of claim 21 wherein said networking layer system is an ATM  
2 ~~switch and said physical layer system is a SONET switch.~~

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